

REMARKS

This application has been reviewed in light of the Office Action dated June 4, 2004. Claims 4, 6 to 12 and 122 are pending in this application, with Claim 121 having been cancelled and Claim 122 having been added. Claims 4, 9 and 12, all of which are independent, have been amended. Reconsideration and further examination are respectfully requested.

In the Office Action, Claims 4, 6 to 12 and 121 were rejected under 35 U.S.C. § 103(a) over U.S. Patent No. 5,589,006 (Itoyama) in view of U.S. Patent No. 5,786,086 (Frihart) and U.S. Patent No. 5,409,549 (Mori). Claim 121 has been cancelled without prejudice or disclaimer of subject matter and without conceding the correctness of its rejection. Reconsideration and withdrawal of the rejection of the remaining claims are respectfully requested.

The present invention generally concerns building materials, each of which has a substrate and a solar cell unit fixed to the substrate. The building materials are fixed on an under roofing material arranged on a backing material, and electrical conductive leads are arranged between the building materials and the under roofing material for leading output from the solar cell units to the outside. Among its many features, the present invention provides (i) that the under roofing material is a sheet material containing any one of asphalt resins, vinyl chloride resins, polystyrene resins, and polyurethane resins, and (ii) that the backing material is a heat insulating board.

Referring specifically to the claims, independent Claim 4 as amended is directed to a cladding assembly including a plurality of building materials each of which comprises a substrate and a solar cell unit fixed to the substrate, each of the plurality of

building materials fixed on an under roofing material arranged on a backing material by a fixing member. The cladding assembly also includes electrical conductive leads arranged between the building materials and the under roofing material to contact the under roofing material, for leading output from the solar cell units to the outside. A jacket material of each of the electrical conductive leads is composed of at least one selected from the group consisting of polyethylene resins, polyamide resins, vinylidene fluoride resins, chloroprene rubber, ethylene-propylene rubber, silicone resins, and fluoroelastomers. The under roofing material is a sheet material containing any one of asphalt resins, vinyl chloride resins, polystyrene resins, and polyurethane resins, and the substrate is composed of at least one selected from the group consisting of metals, resins and glass. In addition, the backing material is a heat insulating board.

Independent Claim 9 as amended is directed to a method of installing a building material including the step of fixing a plurality of building materials each comprising a substrate and a solar cell unit fixed to the substrate on an under roofing material arranged on a backing material by a fixing member. The method also includes the step of arranging an electrical conductive lead between the corresponding building material and the under roofing material to bring the electrical conductive lead into contact with the under roofing material, for leading output from each of the solar cell units to the outside. A jacket material of the electrical conductive lead is composed of at least one selected from the group consisting of polyethylene resins, polyamide resins, vinylidene fluoride resins, chloroprene rubber, ethylene-propylene rubber, silicone resins, and fluoroelastomers. The under roofing material is a sheet material containing any one of asphalt resins, vinyl chloride resins, polystyrene resins, and polyurethane resins, and the substrate is composed of at least

one selected from the group consisting of metals, resins and glass. In addition, the backing material is a heat insulating board.

Independent Claim 12 as amended is directed to an air flowing apparatus including a building material which comprises a substrate and a solar cell unit fixed to the substrate and which is fixed to an under roofing material arranged on a backing material with a space therebetween so that outside air flows in the space, passes through the space and is entrapped in a house or discharged to the outdoors. The air flowing apparatus also includes an electrical conductive lead arranged between the building material and the under roofing material to contact the under roofing material, for leading output from the solar cell unit to the outside. A jacket material of the electrical conductive lead is composed of at least one selected from the group consisting of polyethylene resins, polyamide resins, vinylidene fluoride resins, chloroprene rubber, ethylene-propylene rubber, silicone resins, and flouroresins. The under roofing material is a sheet material containing any one of asphalt resins, vinyl chloride resins, polystyrene resins, and polyurethane resins, and the substrate is composed of at least one selected from the group consisting of metals, resins and glass. In addition, the backing material is a heat insulating board.

The applied art is not seen to disclose or suggest the features of the invention of the subject application. In particular, the Itoyama, Frihart and Mori patents are not seen to disclose or suggest at least the features (i) that the under roofing backing material is a sheet material containing any one of asphalt resins, vinyl chloride resins, polystyrene resins, and polyurethane resins, and (ii) that the backing material is a heat insulating board.

As understood by Applicants, Itoyama teaches a solar cell module composed of a solar cell 101, a surface cover member 108 having a roughened surface, a back insulating

member 109, and a filler 110. A roofing plate 107 is integrally combined with the solar cell module and is fitted and fixed on spacers 102 and adjacent surfaces of a core member 103, thereby forming a vent layer 105 between a roof board 104 and the roofing plate 107. See Itoyama, column 6, lines 5 to 20; and Figures 1(a) to 1(d).

The Office Action equated the roof board 104 of Itoyama with the claimed backing material. However, Itoyama is not seen to disclose or suggest (i) that there is an under roofing material arranged on the backing material which is a sheet material containing any one of asphalt resins, vinyl chloride resins, polystyrene resins, and polyurethane resins, and (ii) that the backing material of Itoyama (roof board 104) is a heat insulating board.

In addition, Frihart and Mori have been reviewed and are not seen to compensate for the deficiencies of Itoyama.

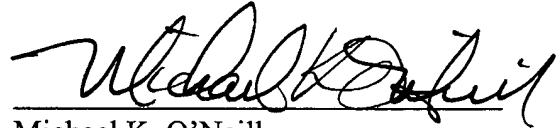
Accordingly, based on the foregoing amendments and remarks, independent Claims 4, 9 and 12 as amended are believed to be allowable over the applied references.

The other claims in the application are each dependent from the independent claims and are believed to be allowable over the applied references for at least the same reasons. Because each dependent claim is deemed to define an additional aspect of the invention, however, the individual consideration of each on its own merits is respectfully requested.

No other matters being raised, it is believed that the entire application is fully in condition for allowance, and such action is courteously solicited.

Applicants' undersigned attorney may be reached in our Costa Mesa, California office at (714) 540-8700. All correspondence should continue to be directed to our below-listed address.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Michael K. O'Neill", written over a horizontal line.

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